

### **Remarks**

Claims 1-11 and 13-19 are pending. Claim 18 is amended herein. Thus, claims 1-4 and 18 are under examination. The remaining pending claims are withdrawn.

#### **I. Amendment and rejection of claim 18 under 35 U.S.C. §112 2<sup>nd</sup> paragraph**

The Examiner states that “from a single clone” renders claim 18 indefinite. Applicant disagrees. The term is routinely used and understood by those skilled in the art. However, without conceding and solely to advance prosecution, the claim is amended to recite that “the cells are cultured from a single clone”. Withdrawal of the rejection under 35 U.S.C. §112 2<sup>nd</sup> paragraph is requested.

#### **II. Election / Restriction / Rejoinder**

The Examiner states that “Applicant did not specifically traverse the restriction of Group I from Group II [...]. As such, the election of Group I over Group II has been treated as an election without traverse.” The Examiner is incorrect. In the response filed June 9, 2005, Applicant traversed as follows:

“Applicant further submits that the subject matter of all the claims is sufficiently related that a thorough search for the subject matter of a single independent claim would necessarily encompass a search for the subject matter of the remaining claims. Thus, a search and examination of the entire application could be performed without serious burden. MPEP §803 clearly states that “If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions.” (emphasis added). It is submitted that this policy should apply in the present application in order to avoid unnecessary delay and expense to Applicant in duplicative examination by the Patent Office.”

The traversal applies to all the Restriction Groups. There is no requirement for traversal of specific Groups. The election of Group I over Group II should not be treated as an election without traverse.

Applicant reminds the Examiner of rejoinder practice.

MPEP 809 states:

“Where the requirement for restriction in an application is predicated upon the nonallowability of generic or other type of linking claims, applicant is entitled to retain in the application claims to the nonelected invention or inventions. Where such withdrawn claims have been canceled by applicant pursuant to the restriction requirement, upon the allowance of the linking claim(s), the examiner must notify applicant that any canceled, nonelected claim(s) which depends from or requires all the limitations of the allowable linking claim may be reinstated by submitting the claim(s) in an amendment. Upon entry of the amendment, the amended claim(s) will be fully examined for patentability.”

MPEP 821.04(a) further states:

For example, a requirement for restriction should be withdrawn when a generic claim, linking claim, or subcombination claim is allowable and any previously withdrawn claim depends from or otherwise requires all the limitations thereof. Claims that require all the limitations of an allowable claim will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104.

Claims 6 and 19 are directed to methods of making the products of claims 1 and 18 respectively. As permitted by the USPTO's rejoinder practice, claims 6 and 19 should be rejoined when claims 1 and 18 are allowable.

Claims 7 to 11 depend ultimately on claim 6 and should also be rejoined when claim 1 is allowable.

Claims 13 and 16 are directed to methods of using the product of claim 3 and contain all the limitations of claim 3. Claims 14 and 15 are directed to methods of using the product of claim 1 and contain all the limitations of claim 1. Claims 13 to 16 should be rejoined when claims 1 and 3 are allowable.

Claim 1 is a generic claim drawn to “a preparation of mammalian cells”. Claims drawn to non-elected species (e.g. claim 5) should be rejoined when claim 1 is allowable.

### **III. Double Patenting**

The Examiner provisionally rejects claims 1 to 4 and 18 under 35 U.S.C. 101 as being in conflict with claims of co-pending U.S. application 10/521,071. Applicant has noted the provisional rejection and will ensure that there is no unjustified extension of patent exclusivity beyond the term of patent(s) that may issue.

#### **IV. Rejection of claims 1-4 and 18 under 35 U.S.C. §102(b)**

Rafii et al. June 2003 Nature Medicine 9(6):702-712 ('Rafii')

The Examiner rejects claims 1-4 and 18 as lacking novelty in light of Rafii. Applicant traverses.

According to the Examiner, Rafii describes characteristics of a prior art product, in this case human bone marrow. The Examiner states that Rafii is cited as evidence of the inherent characteristics of bone marrow, so the reference need not be available before the application's filing date.

Applicant points out that the claims are not drawn to bone marrow. Applicant claims:

A purified preparation of mammalian cells which (i) is capable of proliferation in an *in vitro* culture for more than 40 generations, (ii) does not induce tumor formation in an immunodeficient Rag1-deficient mouse, (iii) maintains the potential to differentiate to hematopoietic and endothelial cells throughout the duration of said culture, and (iv) wherein the cells are inhibited from differentiation when cultured on a gelatinized, feeder-free layer.

Nothing in Rafii suggests that the cell preparation as claimed were known before the inventors invented them. Nothing in Rafii suggests that the bone marrow-derived ECs, HSCs, and HPCs have the characteristics of the cell preparation as claimed. Moreover, Rafii's description relates to the physiological role of EPCs and HSCs. There is no description in Rafii of the cells' behaviour in culture.

The Examiner cites Rafii as inherently anticipating the claimed cells because allegedly Rafii provides evidence of inherent characteristics of the claimed purified preparation of mammalian cells. But the Examiner does not say what this inherent characteristic is. Furthermore, in describing the identification of circulating endothelial progenitor cells (CEPs), Rafii states on page 703 right column, second and third full paragraphs:

"Studies related to the purification and characterization of EPCs and CEPs have been hampered by the absence of specific endothelial markers and functional assays to distinguish these cells from mature vascular wall-derived CECs. Moreover, subsets of myelomonocytic cells can be misrepresented as EPSc or CEPs by expressing endothelial-specific antigens<sup>55, 56</sup>, thereby confusing the interpretation of the cellular contribution to neoangiogenesis.

[...] Discrimination between EPCs, CEPs and CECs is further complicated by the fact that subsets of hematopoietic cells express markers similar to those of endothelial cells, including CD34, PECAM (CD31) Tie-2, von Willebrand factor and VEGFR1. Furthermore, certain hematopoietic cells also incorporate acetylated low-density lipoprotein (Ac-LDL) and bind lectins, including *Bandeiraea simplicifolia* (BS-1) and *Ulex europaeus*, which were once considered to be endothelial-specific (Fig. 1 and Table 1)."

Therefore, not only does Rafii describe characteristics of a product (bone marrow-derived cells functioning in their physiological capacity) that is different from the claimed product (a purified preparation of mammalian cells), Rafii expresses uncertainty about the identifying characteristics of bone marrow-derived cells.

Applicant reminds the Examiner of the standard required to establish inherency, as set out in MPEP 2112 IV:

"The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) [...]" "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) [...]

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original)

Applicant submits that the Examiner has not met the burden that the claims are inherently anticipated in light of Rafii. Withdrawal of the rejection in view of Rafii is requested.

Choi et al. 1998. Development 125:725-732 ('Choi')

The Examiner has withdrawn the rejection of claims 1-4 as lacking novelty over Choi. However, the Examiner notes for the record that Applicant's arguments (i)-(iii) in the response filed September 27, 2005 is unpersuasive because "The mere fact that Choi et al. did not test their cells for the claimed characteristics does not necessarily indicate that the cells lack said characteristics." Applicant refutes the Examiner's position for the record.

As set out above, MPEP 2112 IV outlines the standard to establish inherency. The mere possibility that a certain result or characteristic may be present in the prior art is not enough. The Examiner must establish by extrinsic evidence that the missing element is necessarily present in the thing described in the reference, and that it would be recognized to be so by a skilled person.

Choi's cells may or may not contain the characteristics as recited in the claims. But that is not the test. The test is whether these characteristics necessarily flow from Choi. Applicant's arguments (i)-(iii) in the response filed September 27, 2005 should be sufficient to overcome the novelty rejection on inherency grounds.

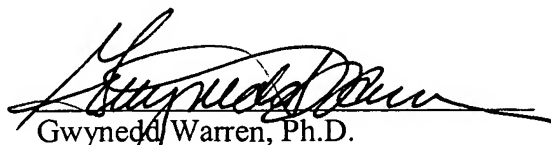
#### **V. Concluding Remarks**

In view of the above amendments and remarks, reconsideration and favorable action on all pending claims are respectfully requested. If any questions or issues remain, the Examiner is invited to contact the undersigned at the telephone number set forth below so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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